CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

January 31, 2001

Mr. Les Toth
5546 Old Salt Ln
Agoura Hills, CA 91301

Dear Mr. Toth:

Staff has reviewed the applicant's alternative conditions attached to its January 9, 2001 opening brief. We believe that, for the most part, we understand the concerns raised by the applicant and the intent of the proposed changes. However, we do not believe that the proposal is adequate. We understand the applicant's concerns with our conditions to be as follows:

1. Dry cooling. We agree that obtaining financing for the project is a critical aspect of approval of the project. But it is not clear to us how the applicant's proposal to "ensure" that the aquifer test are conducted prior to the start of operation provides their financiers with the certainty they will need. We are willing to drop the contingency condition Soils & Water 10 in favor of a condition that requires the aquifer tests to be completed prior to start of operation. However, we believe the Energy Commission will require the same assurances that the applicant's financiers will require that this is truly feasible, including an evaluation of whether the scope of the project has changed.
2. The applicant can't afford to redo the aquifer test if the test does not show any measurable drawdown. We have no desire to require an endless “do-loop” of aquifer testing. However, we recommend that the limit of detection of the drawdown measuring equipment should be used to calculate aquifer parameters only if there is no measurable drawdown in the pumping well during the test. A single well test, which uses the drawdown in the pumping well to calculate aquifer parameters, would a better contingency if drawdown cannot be measured in the monitoring wells.
3. Five feet versus two. We only see evidence in the record to support two feet, not five feet, for the trigger for ensuring well reliability that requires well modifications. However, we do agree the 5 feet is the appropriate trigger for the purpose of requiring mitigation for increased operational costs of well pumping.
4. The applicant believes the aquifer tests will show the area of potential influence of the project, not whether a physical impact will occur. Consequently, the applicant is proposing that a contractor examine each well to determine whether a physical impact will occur. We strongly disagree with the applicant on this point. The results of the aquifer test will provide an objective method to evaluate whether an impact will occur. We do agree that these tests will not identify the appropriate mitigation, this will require examination of each well.

5. Criteria for impact is whether the well can still produce the same amount of water after the project is operating as before. We don't agree.
6. Determination of the appropriate mitigation measures is the Commission's responsibility, and not the well owner. We don't disagree, but do note that in the applicant's proposal the applicant's consultant is responsible for determining the appropriate mitigation. We proposal an alternative approach which will provide the applicant with the assurances it needs that the mitigation is appropriate.
7. Once the mitigation is determined , the applicant will sign a check to cover the mitigation. See comment #6 above.
8. The applicant is looking for certainty about what mitigation will be required and under what conditions. We believe our proposal that is a superior method of providing that certainty and addresses the applicant's other concerns.

Attached is a decision-tree that we believe will help the parties understand staff proposal. Also attached are **draft** conditions to implement this alternative approach. We understand the applicant's desire not to delay the decision date of the project. We are providing the attached to expedite the process of developing an adequate record and appropriate conditions. We hope that all parties will be open to discussing this proposal and reaching a stipulation on the appropriate conditions of certification on this project at the scheduled workshop on February 5, 2001. We believe this will serve the objective of obtaining a decision on this project and will ensure that the interests of all parties are protected.

If you have any questions, please call me at (916) 653-1614, or E-mail me at rbuell@energy.state.ca.us.

Sincerely,

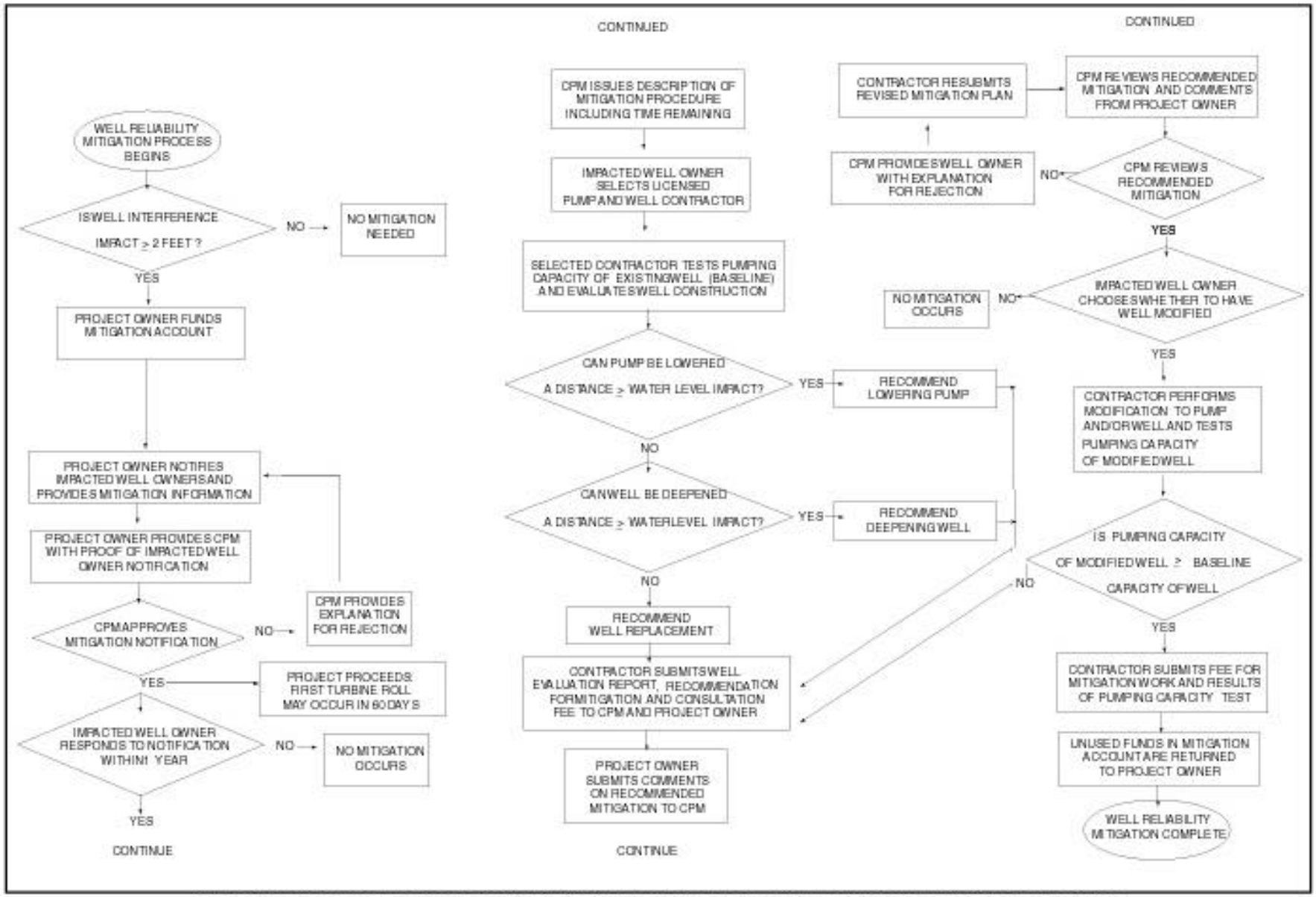
Richard K. Buell
Siting Project Manager

Enclosure

cc: Three Mountain Power Project POS
Linda D. Bond
Connie Bruins

RKB:rkb
third try.doc

WELL INTERFERENCE MITIGATION - Figure 1
Three Mountain Power Project - Staff Proposed



CALIFORNIA ENERGY COMMISSION, ENERGY FACILITIES SITING & ENVIRONMENTAL PROTECTION DIVISION, FEBRUARY 2001

ALTERNATIVE SOIL & WATER CONDITIONS

These would replace staff 9-14 or applicant's 9-13

SOIL & WATER 9: The project owner shall conduct (or cause Burney Water District to conduct) aquifer tests in each of the two new project wells to determine the site-specific aquifer parameters. The project owner shall submit a work plan describing the design of the full-scale aquifer tests to the CPM for review and approval at least two months prior to the start of the aquifer tests. The work plan shall describe the methodology to be used to conduct the aquifer tests, the recommended location for the monitoring wells, and the methodology to be used to calculate the specified aquifer parameters. The project owner shall determine the locations of the monitoring wells based on the results of the specific capacity test and on the methodology selected for aquifer test analysis.

- The aquifer test for each of the two project wells shall include the measurement of water levels in the pumping well, in the monitoring wells, and in the other (non-pumping) project well. Measurement of water levels shall also be made in the Hathaway well and at a well site in Johnson Park, if the owners provide permission.

- Six monitoring wells (not including existing wells such as Hathaway's) shall be used for the aquifer tests.

- For the southerly project well, two monitoring wells will be placed based on information derived from the drilling logs of the borings for the pumping wells and the results of the specific capacity tests. The distance of these monitoring wells from the pumping well and their orientation with respect to the pumping well will be selected to best assess aquifer parameters, including anisotropy. (Based on available aquifer data, it is anticipated that one of these monitoring wells will be oriented along the generally N-S axis of regional faulting, which is the most probable direction of regional anisotropy; the other will be located along the E-W axis. The distance of the monitoring well along the N-S axis from the pumping well may be greater than the distance of the monitoring well along the E-W axis to account for the anticipated regional anisotropy.)

- The northerly project well also will have two monitoring wells similar to those described above for the southerly project well, for assessment of aquifer parameters, including anisotropy. In addition, the northerly project well, which will be closest to the wells in Johnson Park and to large agricultural wells of concern, will have two more monitoring wells, placed in close proximity to the pumping well. The distance and orientation of the proximate monitoring wells relative to the northerly pumping well will be selected to give a high probability of observing drawdown.

Protocol:

- Water-level measurements will be made before, during, and after pumping. These water levels (and the drawdown derived from them) will be used to calculate aquifer parameters. If drawdown attributable to test pumping is observed in the pumping well, any monitoring well or in the non-pumping well, the information will be used in the calculation of aquifer parameters. If drawdown is not observed in the pumping well, any of the monitoring wells, or in the non-pumping well during either of the tests, the limit of detection of the drawdown measuring equipment (typically 0.01 feet) shall be the amount of drawdown attributed to the closest monitoring well for use in the calculation of aquifer parameters.
- The test period for each of the aquifer tests shall be forty hours.
- The aquifer tests shall be conducted at a minimum discharge rate of 1500 gpm.
- Groundwater pumped during the tests will be used and stored in the Burney Water District storage tank.
- The aquifer tests shall not be performed if rain or snowmelt has occurred during the previous seven days.

The project owner shall calculate the following site-specific values based on the results of the aquifer tests:

- transmissivity of the aquifer;
- hydraulic conductivity;
- anisotropy, if possible; and
- storativity (storage coefficient) of the aquifer.

Verification: At least two months prior to the start of the aquifer tests, the project owner shall submit to the CPM the work plan that details (1) the methodology for conducting the proposed aquifer tests on the project wells, (2) the methodology for calculating the specified parameters and values, and (3) the methodology to be used to calculate potential well interference. The description of the methodology for calculating aquifer parameters and well interference shall contain provisions for different analysis methods depending upon the results of the aquifer testing (*e.g.*, whether the aquifer shows anisotropy or not). The CPM shall complete review of the work plan within than thirty days of submittal of the plan. With the approval of the work plan by the CPM, the project owner shall perform the aquifer tests following the methodology detailed in the work plan, including the proscribed protocol.

Within one month after completion of the aquifer tests, the project owner shall submit a report on the results of the aquifer tests to the CPM for review and approval, that details how the aquifer tests were conducted and the results of the tests, including the well logs, the raw data, the actual test procedure, and the calculation of the aquifer parameters of transmissivity, effective horizontal hydraulic conductivity, anisotropy (if possible), and storativity for each project well. The CPM shall complete review of the aquifer test report within two weeks of submittal of the

report. In order to complete the review of the aquifer tests and the evaluation of the need for any mitigation, the aquifer tests shall be performed at least seven months prior to first turbine roll.

SOIL & WATER 10: With the approval of the aquifer tests report by the CPM, the project owner shall calculate the well interference impacts for existing wells that were in service at the time of the Commission decision. The well interference analysis shall include an evaluation of two types of impacts.

Well reliability impacts: The analysis shall calculate the effect of the maximum rate of project pumping. It shall identify all wells that could experience a drawdown of two feet or more as a result of the maximum rate of project pumping ("affected wells"). The maximum rate of pumping is defined as the maximum rate that the project shall pump during any one-month period during the life of the project.

Increased pumping lift impacts: The analysis shall also calculate the monthly effect of average project pumping. It shall identify all wells used for municipal, agricultural, commercial or industrial purposes that could experience an average monthly drawdown of five feet or more due to project water use ("financially affected wells").

The well interference analysis shall use the new aquifer parameters developed from the aquifer testing of the new project wells and shall evaluate drawdown impacts based on the following assumptions and conditions:

- transient conditions
- pumping period equal to the life of the project,
- variable monthly pumping, based on estimated seasonal water use,
- principle of superposition,
- maximum water consumption from BWD water treatment plant (500 acre-feet per year), and
- pumping in excess of BMP's average annual water use shall be included.

Verification: No later than one month after the submittal of aquifer test results, the project owner shall submit a report and the computer files to the CPM that describes the two analyses of well interference. The description shall include a listing of all the parameters used, the calculation method, the location and distance of impacted wells and financially impacted wells relative to the project wells, and a copy of all computer files used in the development of the analysis. Computer files shall include any spreadsheets, model input and output files, and a reference information on the model source code (i.e. source code name and version number). The CPM shall complete review of the well interference report no later than 1 month after the submittal of the report.

SOIL & WATER 11: The project owner shall provide funds for an account to pay for well modifications to affected wells. The funds shall consist of the amount of money required to replace all of the affected wells identified in the well

interference report. The CPM shall review the provision of funds within fifteen days.

Verification: The project owner shall provide the funds to the CPM within fifteen days of the approval of the well interference report by the CPM.

SOIL & WATER 12: Once the provision of mitigation funds has been approved by the CPM, the project owner shall notify all owners of affected wells by return receipt mail of the results of the well interference report, and of their eligibility for mitigation. The notification shall include the calculated drawdown that would occur in the well owned by the person to whom the notice is being sent, a copy of the well interference report, and a description of the mitigation procedure, including the one-year time limit for response to the notification. The project owner shall provide copies of the notice to the CPM, who shall review the submittal within fifteen days.

Verification: The project owner shall provide to the CPM copies of the notice and of the return receipts for the notices to affected well owners of the results of the well interference report and of the owner's eligibility for mitigation. The copies shall be provided to the CPM within fifteen days of receipt of last return receipt.

SOIL & WATER 13: The project may not proceed with first turbine roll until 60 days after the CPM has approved the provision of the notice identified in **SOIL & WATER 12**.

Verification: The project owner shall inform the CPM of its intent to proceed with first turbine roll at least thirty days prior to first turbine roll.

SOIL & WATER 14: Owners of affected wells shall respond to the notification identified in **SOIL & WATER 12** within one year of its receipt in order to receive mitigation. To respond, notified affected well owners must select a state-licensed pump and well contractor to evaluate the existing well, test the existing specific capacity of the well (baseline), and prepare a well evaluation report identifying the recommended mitigation and its cost to the CPM and the project owner.

Protocol:

- If it is possible to lower the pump by an amount equal to or greater than the maximum calculated well interference, then the recommended mitigation shall be limited to pump lowering.
- If it is not possible to lower the pump unless the well is deepened, then the recommended mitigation shall be limited to deepening the well.
- If neither pump lowering nor well deepening is feasible, then the recommended mitigation shall be well replacement.

The CPM shall review the well evaluation report, any comments from the project owner and the affected well owner within thirty days of submittal. The CPM will work

with the affected well owner, the licensed pump and well contractor and the project owner to resolve any disagreements about the mitigation to be provided.

Verification: Within one year of receipt of the notice identified in **SOIL & WATER 12**, those affected well owners who wish to receive mitigation shall submit a well mitigation package, prepared by a state-licensed pump and well contractor, to the CPM and the project owner. The report may include the invoice from the state-licensed contractor for the cost of the well evaluation and the baseline specific capacity test. The CPM shall work with the affected well owner, the licensed pump and well contractor, and the project owner to resolve any disputes about the appropriate mitigation for the well. The CPM shall complete review of the well mitigation package within thirty days of submittal.

SOIL & WATER 15: After approval of the well mitigation by the CPM, the affected well owner may submit to the CPM an invoice from the state-licensed contractor for the well mitigation approved by the CPM within eight months of CPM approval. The invoice shall include the results of the post-mitigation specific capacity test. The invoice may include costs for testing the pumping capacity of the well.

Verification: The affected well owner shall submit an invoice to the CPM for the well mitigation approved by the CPM within eight months of CPM approval of the mitigation package and within sixty days of the completion of the well modification.

SOIL & WATER 16: If the post-mitigation capacity test indicates that the pumping capacity of the modified well is at or above the baseline capacity, the CPM shall pay the mitigation invoice within 30 days of receipt, and the mitigation for that well shall be considered complete. However, if the post-mitigation specific capacity test indicates that the pumping capacity of the modified well is below that of the previously measured baseline test, the affected well owner may repeat the steps identified in **SOIL & WATER 14**. In this case, the affected well owner shall provide the CPM with the submittal of the mitigation invoice and also notify the CPM in writing that mitigation will be repeated. Unused funds in the mitigation fund shall be returned to the project owner when the mitigation is complete.

Verification: : The CPM shall pay the mitigation invoice within 30 days of receipt. If the post-mitigation specific capacity test is below the baseline test, the affected well owner may repeat the steps identified in **SOIL & WATER 14**. The affected well owner shall notify the CPM in writing with the submittal of the mitigation invoice, if mitigation is to be repeated If the post-mitigation capacity test indicates that the pumping capacity of the modified well is at or above the baseline capacity or if the affected well owner does not request repeat mitigation, the mitigation for that well shall be considered complete, and unused funds in the mitigation fund shall be returned to the project owner.

SOIL & WATER 17: The project owner shall pay compensation for increased energy costs to any owner of any financially affected well used for municipal,

agricultural, commercial or industrial purposes for each month in which the monthly average drawdown is equal to or greater than five feet. The project owner shall compensate financially affected well owners for the increase in energy costs, according to formula:

Increased cost for energy	=	(change in lift/total system head) x total energy consumption x costs/unit of energy
Where:		
change in lift (ft)	=	calculated change in water level in the well resulting from project
total system head (ft)	=	elevation head + discharge pressure head
elevation head (ft)	=	difference in elevation between wellhead discharge pressure gauge and water level in well during pumping.
discharge pressure head (ft)	=	pressure at wellhead discharge gauge (psi) x 2.31

Protocol: At least sixty day prior to first turbine roll, the project owner shall submit to the CPM a Compliance Report describing compensation for increased pumping lift to be undertaken to comply with the provisions of this condition to the CPM for review and approval. The mitigation plan shall be consistent with the following requirements:

1. Any annual reimbursements for increases in pumping lift to financially affected well owners shall be only to those well owners whose wells were in service at the time of the Commission decision.
2. If there are no wells that will be financially impacted by project pumping at any time during the life of the project, then the project owner shall provide a report that explains this finding and fully describes the basis for this conclusion.
3. Compensation shall be provided on an annual basis, as described below.

The project owner shall notify all owners of the financially impacted wells within 15 days of the CPM approval of the well interference analysis. To initiate the mitigation process for compensation for increased pumping lift for an affected well, the well owner shall provide an energy and system head report to the CPM and the project owner within 1 year of notification of mitigation eligibility. The energy and system head report shall consist of an estimate of current, monthly energy consumption costs and a well evaluation of total system head, performed by a state-licensed pump contractor, and can include the invoice for the preparation of the report. Within 30 days of the submittal of each energy and system head report by the affected well

owners, the project owner shall submit to the CPM a report describing calculation for compensation for energy costs associated with additional lift requirements. The compensation calculation shall include compensation for the preparation of the energy and system head report. The CPM shall review the compensation calculations within 30 days of submittal. With the approval of the compensation calculations by the CPM, the project owner shall provide compensation payment on March 31st.

Thereafter, compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the financially affected well owner, the project owner shall provide energy meters for each well or well field affected by the project. In order for the financially affected well owner to receive ongoing compensation, the well owner must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption and cost per unit of energy paid. For each year after the first year of operation, the project owner shall include an adjustment for any deviations between projected and actual energy costs for the previous calendar year. The increase cost for energy shall be based on the actual cost per unit of energy paid by the affect by the financially affected well owner.

Verification: The verification for compensation required for increased lift shall be as follows: No later than fifteen days after CPM approval of the well interference analysis, the project owner shall notify all owners of the financially impacted wells of their eligibility for pumping lift mitigation. The project owner shall provide to the CPM copies of the return receipts for all notices to affected well owners of the results of the well interference report and of the owner's eligibility for mitigation. The copies shall be provided to the CPM within fifteen days of receipt of last return receipt. Within 30 days of the submittal of each energy and system head report by the affected well owners, the project owner shall submit to the CPM a report describing calculation for compensation for energy costs associated with additional lift requirements. The project owner shall submit all calculations, along with any letters signed by the owners of financially affected wells, indicating agreement with the calculations, and the name and phone numbers of those well owners that do not agree with the calculations. The CPM shall review the compensation calculations within 30 days of submittal. With the approval of the compensation calculations by the CPM, the project owner shall provide compensation payment on March 31st.

Compensation payments shall be made by March 31st of each year of project operation. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for lift undertaken to comply with the provisions of this condition.

SOIL & WATER 18: The project owner shall measure groundwater levels in the two monitoring wells at the TMP wellfield on a monthly basis for the first six months following the project start up and thereafter on a quarterly basis.

Verification: Sixty days following the completion of the first six monthly groundwater level measurements, the project owner shall submit a report of the groundwater level monitoring to the CPM. Thereafter, the project owner shall submit an annual report by March 31st of each year that describes the results of the quarterly groundwater level measurements.

SOIL & WATER 19: The maximum project pumping rate shall be limited to that used to calculate well interference for well reliability impacts.

Verification: The project owner shall include in the annual report submitted March 31 of each year the maximum and average monthly pumping rates for the previous calendar year.